

CLAIMS

1) Method of analysis of the tumor aggressivity of cancerous cells consisting of the measurement of the quantity of polymerized actin in the steady state in a lysate of the said cells.

2) Method according to claim 1, characterized by the fact that the measurement carried out on the lysate is compared to one or more reference values of the quantity of polymerized actin in the steady state i.e., in the cells in a culture specific to a phenotype i.e., in the tissues taken from biological samples.

3) Method according to one of the claims 1 or 2, characterized by the fact that the quantity of polymerized actin corresponds to the sum of all the F-form actin.

4) Method according to one of the claims 1 to 3, characterized by the fact that the measurement of the quantity of actin in the steady state is carried out by static fluorescence polarization in the presence of actin monomers bound to a fluorochrome, the monomers being incorporated into the actin filaments (actin F) formed during the endogenous actin polymerization of the lysate.

5) Method according to claim 4, characterized by the fact that the actin monomers bound to a fluorochrome are added to the cellular lysate in a proportion ranging between 1/80th and 1/1600th in relation to the quantity of endogenous actin.

6). Method according to one or the other of the preceding claims, characterized in that it includes:

- the lysis of cancerous cells in non-denaturing conditions for the proteins, and the elimination of cellular debris,
- the total dosage of proteins in the lysate,
- the addition of actin monomers bound to a fluorochrome,
- the addition of substances necessary for the endogenous actin polymerization and the protection of the lysate proteins,
- the measurement of the quantity of polymerized actin in the steady state in the lysate.

7) Method of identification of molecules likely to present an anti-cancer activity, characterized in that it includes the implementation of a method according to one or the other of claims 1 to 6 in the presence of an appropriate quantity of the said molecule, and that the capacity of the said substance to restore a quantity of polymerized actin in the steady state corresponding to that of non-aggressive cells is determined.

8) Application of the method according to one or the other of claims 1 to 6 to the evaluation of the invasive character of the said cells.

9) Application of the method according to one or the other of claims 1 to 6 to the evaluation of the oncogenicity of the said cells.

10) Application of the method according to one or the other of claims 1 to 6 to the prediction of the sensitivity of the said cells to an anti-cancer treatment.

11) Application according to claim 10, characterized in that the said anti-cancer treatment consists of radiotherapy or chemotherapy.

12) A kit for the implementation of a method according to one or the other of claims 1 to 7, characterized in that it includes;

- a cell re-suspension medium for the cell lysis,
- the substances necessary for the endogenous actin polymerization and the protection of the lysate proteins,
- a solution of actin monomers bound to a fluorochrome,
- an actin polymerization tampon,
- a general actin tampon,
- possibly the extracts of aggressive and non-aggressive reference cells.